

Compliance of Healthcare Workers with Hand Hygiene Practices in the Northeast of Iran: An Overt Observation

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ABSTRACT

Hand hygiene (HH) is one of the most effective methods to prevent transmission and spread of microorganisms from one patient to another, also, it used to reduce the spread of pathogens in clinical settings and to help control outbreaks but compliance is usually poor. The purpose of this study was to analyze the compliance of hand hygiene and affecting factors among healthcare workers (HCWs) of northeast hospitals in Iran. This study was conducted based on observation method for the compliance of hand hygiene according to the World Health Organization (WHO) guidelines. HCWs were observed during routine patient care in different shifts, also the technique of hand hygiene was assessed through hand washing with alcohol-based disinfectant. Data were collected during 1 year, from June 2014 to July 2015 by the infection control teams in the northeast hospital of Iran. By direct observation, we evaluated a total of 92518 hand hygiene opportunities from 29 hospitals in the northeast of Iran during 1 year, with overall compliance rates in these hospitals were 43.42%. Compliance rates differed by role: nurses 43%, doctors 19 % and other health workers 29%. In this observational study, we identified that adherence to hand hygiene practice and use of alcohol-based disinfectant was very low in this hospitals, so effective intervention programs to promote adherence to hand hygiene and use of disinfectants could be effective to increase compliance.

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1. INTRODUCTION

Hand hygiene (HH) is one of the most effective methods to prevent transmission of microorganisms from one patient to another, also it is one of the most useful programs to control the infection in healthcare facilities but compliance is usually poor [1, 2]. According to the hand wash guideline of WHO and CDC, it could be better if healthcare workers wash their hands with soap and water routinely, also, alcohol-based disinfectant is recommended when soap and water washing was unavailable [3-5]. The aim of this study is to consider the compliance of hand hygiene and factors which influence its adherence among the HCWs in 29 hospitals in the northeast of Iran.

2. METHOD

This observational study was performed in 29 private and governmental hospitals in northeastern Iran. Health workers were observed indirectly during routine patient care in different shifts. Hand washing

sinks were situated in patient's rooms, also, alcohol-based disinfectants were provided at an arm's reach for every bed or incubator.

Observational data were collected during 1 year, from June 2014 to July 2015 by the infection control teams. The details of contact with the patient, hand hygiene compliance, and the technique of hand washing among the health care workers were noted at "My 5 Moments for Hand Hygiene" of the World Health Organization (WHO) which explains the main moments that recommends health-care workers to clean their hands: 1. before contact with the patient, 2. before clean/aseptic procedures, 3. after body fluid exposure/risk, 4. after touching a patient, and 5. after contact patient environment [6-8].

Data were collected by using the modified version of the WHO checklist and based on the use of both waterless, alcohol-based hand disinfectants and hand washing with soap was recorded and as a mean of hand hygienic practice in our study. Observers performed the activities of health workers at different times and locations. The observation of each health centre was starting at 8:00 a.m. and ending at 5:00 p.m. for two days. Also, to limit the bias, each unit was observed by a different pair of observer each day. The population of the study included health care workers, such as doctors, nurses, and others health workers in these hospitals.

3. DATA ANALYSIS

Hand hygiene compliance was calculated for doctors, nurses and other health workers in all 29 hospitals then reported as a percentage of the estimated opportunities observed for the specific hand hygiene procedure. Data from the checklist were entered into Microsoft Excel 2013 and imported into SPSS version 19 and analysed.

4. RESULT

In the present study, we evaluated a total of 92518 hand hygiene opportunities from 29 hospitals in the northeast of Iran, from June 2014 to July 2015 by the infection control teams. Our analysis shows overall compliance rates of 43.42% in health worker. Compliance rates differed by role: nurses 43%, doctors 19% and other health workers 29% shown in Table 1.

Table 1. Compliance and Technique of Hand Hygiene among Health Workers (Doctors, Nurses and Others) in Northeast Iran Hospitals

After body fluid exposure			After contact patient environment			After touching a patient			Before clean/aseptic procedures			Before contact with the patient			
HW	HR	Indec	HW	HR	Indec	HW	HR	Indec	HW	HR	Indec	HW	HR	Indec	
3455	2654	8700	2574	2398	8393	3645	3820	11415	1804	2371	8953	1532	3118	11900	Nurses
1631	1189	3825	1450	1439	6519	577	680	2395	403	525	1640	336	564	4556	Doctors
2667	2023	6307	1591	1460	6802	2082	1731	6480	365	462	1736	521	1159	7344	Others

Hand hygiene compliance with respect to the five moments for hand hygiene were as follows: compliance before contact with the patient was 24.54%, before clean/aseptic procedure was 12.75%, after body fluid exposure was 19.5%, after touching with patients was 21%, and after contact patient environment was 22%. Health workers were more prefer to wash their hands with soap and water procedure (26.39%) instead of using alcohol-based disinfected (23%).

4.1. Hand hygiene compliance among nurses

Nurses more likely prefer to clean their hand after body fluid exposure risk (70%), secondly, after contact with a patient (65%), then, before clean/aseptic procedures (47%), and finally before clean/aseptic procedures (39%).

4.2. Hand hygiene compliance among doctors

Doctors frequently prefer to wash their hands after exposure to body fluid risk (74%), secondly, before a clean/aseptic procedure (57%), thirdly after contact with a patient (52%), fourthly after contact patient environment (44%), and finally before touching patient (20%).

5. DISCUSSION

This observational study involved concealed observe of hand hygiene practices of health workers in the northeast hospitals of Iran display that the compliance of hand hygiene among the HCWs is poor. Hand hygiene, before and after contact with the patient or patient environment contact, before aseptic procedures, and after exposure to body fluid, which is WHO suggestions, is recommended in all guidelines published infection control and public health. Despite all these guidelines for hand hygiene in healthcare unite, the compliance with hand washing is still poor [9-12]. The present study aimed to define the compliance of hand hygiene among healthcare workers in the northeast of Iran.

There are several studies on the compliance of hand hygiene among HCWs. In Europe compliance with hand hygiene was different in the reports ranging from 33 to 65% [13, 14]. The study in Turkey showed that hand washing frequency among healthcare worker was 12.9% in an intensive care unit, also other observational studies show that hands were washed both before and after venipuncture in only 41 (45.1%) cases [15, 16]. In Iran, there are few studies on the compliance of hand hygiene. Moreover, this study attempted to measure the use of hand hygiene techniques based on the WHO five recommend.

The researchers in varies study considered that most of the health workers prefer to use hand hygiene after contact with the patient or the patients' environment. These findings lead to the assumption that HCWs prefer to protect themselves rather than patients [17-20]. The guidelines of WHO and CDC for hand hygiene in healthcare centre, and prevention suggest direct observation of compliance and measuring the use of hand hygiene products [3, 8, 21].

Direct observation is a useful method to identify the strengths and weaknesses of hand hygiene, to mention the number of hand hygiene opportunities, for defining the techniques, and to provide feedback to healthcare workers [20, 18, 22, 23]. The researchers of this study prefer to estimate the compliance of hand hygiene by direct observation like many studies in the literature. When the health workers know that they are under observation, hand hygiene efficiency usually improves [20]. However, in this study, health workers knew that they were under observation, but the compliance with hand hygiene was very low. Validated observers, also, randomly selecting the locations and day shifts of observation can minimize the observer bias.

In the present study we noticed that the health worker prefer to use soap and water compared to alcohol-based disinfected hand hygiene similar to some document in the literature; however, alcohol-based disinfectants provide a remaining effect that soap and water do not provide, it's maybe because of the unpleasant effects on the hands and lack of knowledge concerning its benefits.

6. CONCLUSION

This study notice evidence that hand hygiene compliance among health workers is so low. Although the hand hygiene methods are simple, that may be because of the lack of motivation and increased workload, so its need to design hand hygiene promotion programmes in this health centres. In addition, hand hygiene training and promotion in the hospital should include the introduction of alcohol-based hand rubs as an available and effective option for the hand hygiene.

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